

Hatfield and McCoy Mine Rescue Contest

PREPARED STATEMENT

Welcome to the Hatfield and McCoy Pond Creek Mine No. 1. You are located on the surface at the “A” shaft intake elevator. This shaft is a split shaft with intake normally going down the elevator side and exhausting out the other side. The exhausting fan for this “A” shaft is presently not running but has been repaired and may be started or stopped if you need it. This fan quit running when an event happened last night while five men were moving the section to a new area of the mine. This mine also has a “B” shaft which is also a split shaft with intake on one side and an exhaust fan on the other side. At present that fan is running and being monitored continuously. We will absolutely not deenergize that “B” shaft fan. Both fans have automatic closing doors which close airtight on the exhaust side preventing air movement down the shaft when the fan on that particular shaft is off and open when the fan is exhausting. Neither fan can be reversed nor only the “A” shaft fan can be turned on/off.

This mine has two other slope entries approximately one mile from here and another one located in number three entry near where you entered. We tried to reach the missing miners from the other two slope entries but were forced to stop due to debris blocking all approaches to the last known areas where the miners were working. We decided to move to this side of the mine and start exploring while we determine the best method for moving the debris to get to these missing miners. The opening to the #3 slope entry on this side has been explored by another mine rescue team and you do not need to go to that location. The team had to quit before entering the mine due to problems with their equipment.

Last night the dispatcher notified the superintendent that he heard a loud sound and saw smoke and debris coming out of the mine. This event is what knocked the “A” shaft exhaust fan off line. Later one of the workers came to the surface on the “A” shaft elevator and reported the mine was filled with smoke and he was lucky to get out alive. This miner was pumping water in the number three entry which has become a major problem here at the mine. We deenergized the pump here on the surface. You will need to request the pump be turned back on if you need it.

When you open the door from the surface to the elevator and close it you will be considered to be on the bottom. When you open the door from the bottom to the elevator and close it you will be considered to be on the surface.

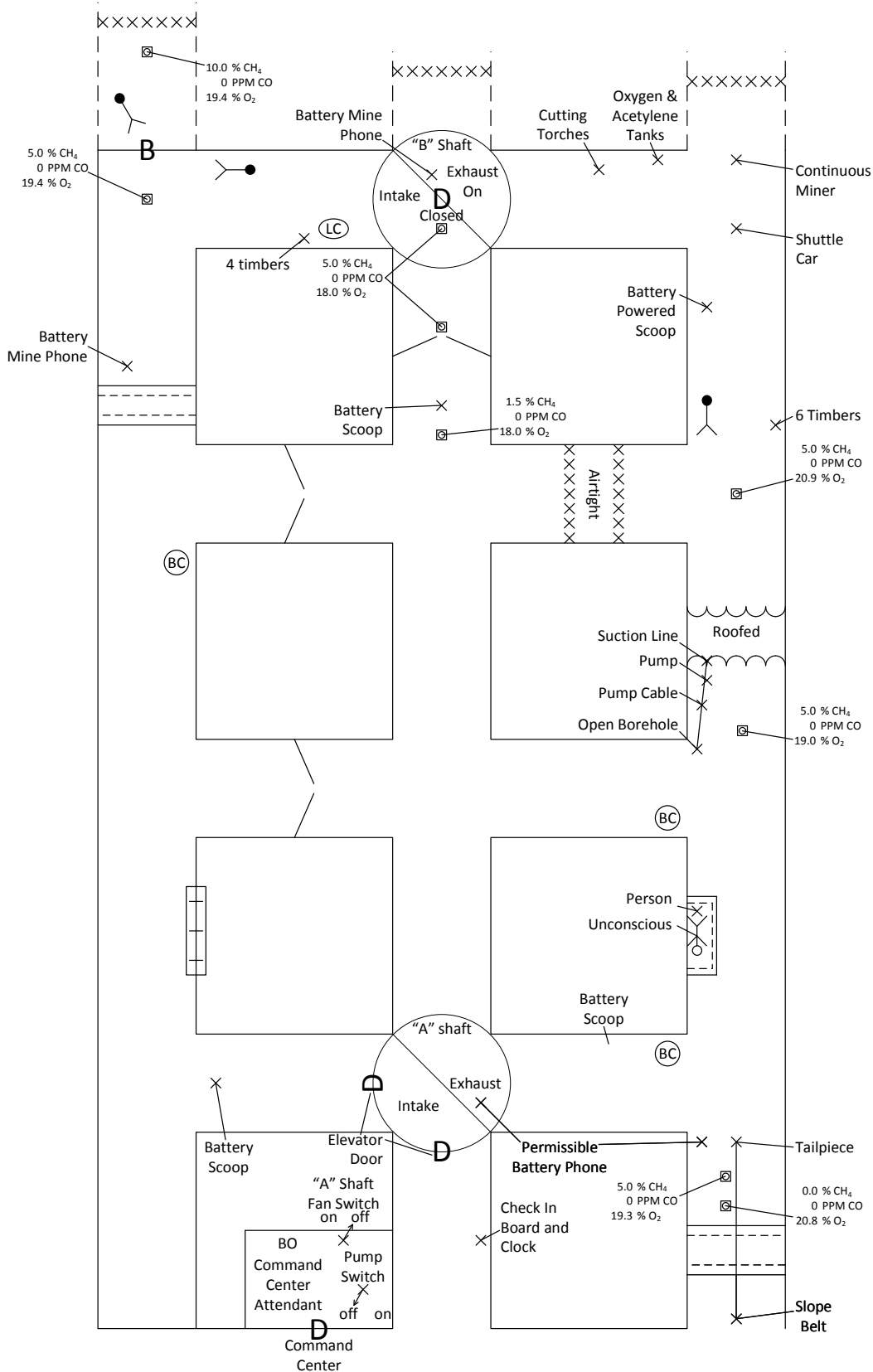
This mine makes approximately 4,000,000 cubic feet of methane in a twenty four hour period. We have areas of unsafe roof that you may encounter.

The map is not up to date. Both “A” and “B” shafts separation walls are two feet thick concrete with reinforced steel. There is a door in the separation wall at “B” shaft, however, we do not know if it is open or closed. There is a back-up team available; however, any ventilation work accomplished on the field must be done by the working team. No work to shafts will be done on the surface. Good Luck!

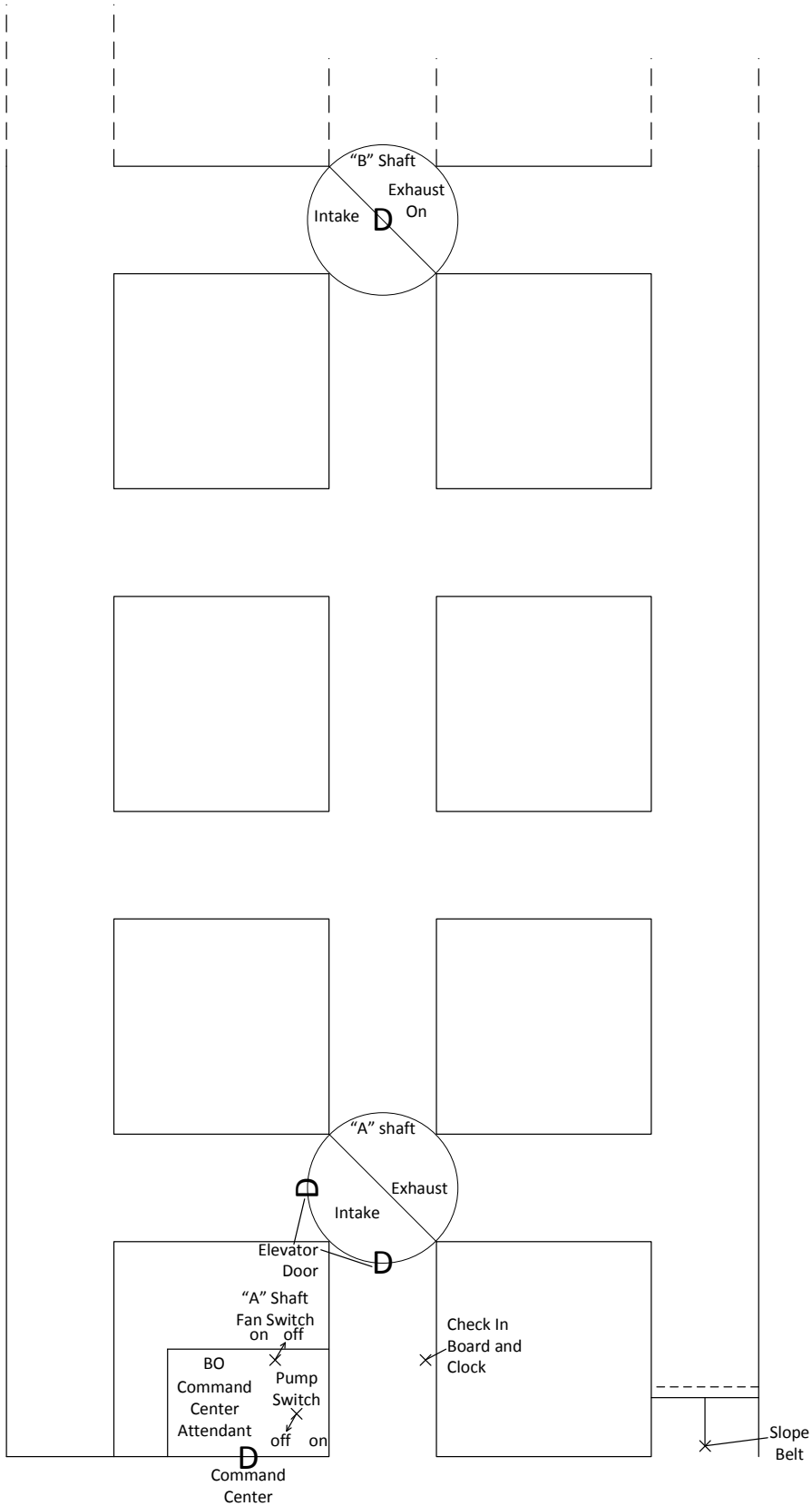
WRITTEN INSTRUCTIONS

- 1. DO NOT BREACH EITHER FAN SEPARATION WALL-YOU MAY TRAVEL THROUGH THE DOOR PROVIDED.**
- 2. LOCATE ANY MISSING MINERS AND BRING SURVIVORS TO THE SURFACE.**
- 3. YOUR TEAM HAS 90 MINUTES TO WORK THE PROBLEM.**
- 4. GOOD LUCK**

2015 Hatfield McCoy Mine Rescue Contest – Day 1 Problem Map



2015 Hatfield McCoy Mine Rescue Contest – Day 1
Team Map



PRIOR TO STARTING THE CLOCK

The team will have four minutes to position their equipment and lay out lifeline. The command center attendant and/or briefing officer will be escorted to the command center during this time and will set up during these four minutes. The briefing officer will not be allowed to physically help the team. If the team fails to start the clock after four minutes a judge will start the clock for them and they will be discounted under Rule 50.

AFTER CLOCK IS STARTED

Rule 26-captain must place date, initials and team number on check board.

Rule 14- communications system shall be tested and gas detectors used must be examined in the presence of a judge.

Rule 17-pull signals must be arranged if lifeline is used instead of wireless communication system. Signals need not be arranged if using wireless unless later on in the contest the team must use the lifeline then signals may be arranged at that time.

Rule 6- examination of gauges and apparatus of all team members prior to going inby FAB.

INITIAL CHECK INBY IN OPENINGS

Rule 23- In this problem the captain must make a visual roof exam of the area once the team arrives at the bottom of the “A” elevator shaft. If the team decides to go to number three entry and make the slope opening even though it states in the prepared statement it has already been examined by another rescue team – do not discount. If they do not make the number three entry – do not discount due to the prepared statement.

Rule 24c- gas test must be made at the bottom of the “A” elevator shaft.

2A TEAM STOP

Rule 28- The fifty foot apparatus check must be done when the team reaches 2A intersection in number one entry.

Rule 23- Captain must make a visual examination of the roof by breaking imaginary lines both inby and outby in the 2A intersection.

Rule 24b- Gas tests must be made in each opening of 2A intersection. This will require a gas test inby toward 3A and outby toward 1A.

Rule 23- No sound and vibration method roof and rib tests are required at the area unsafe rib inby between 2A and 3A.

3A TEAM STOP

Rule 23- Captain must make a visual examination of the roof by breaking imaginary lines both inby toward 4A and to the right toward 3B intersection.

Rule 27- Captain must mark date and initials on temporary stopping not intact between 3A and 3B.

Rule 24b- Gas tests must be made in each opening of 3A intersection. This will require a gas test inby toward 4A and to the right toward 3B.

TEAM STOPS-3B

Rule 23- Captain must make a visual examination of the roof by breaking imaginary lines inby toward 4B, outby toward 2B and to the right toward 3C.

Rule 24b- Gas tests must be made in each opening of 3B intersection. This will require a gas test inby toward 4B, outby toward 2B and to the right toward 3C.

AT THIS POINT THE TEAM HAS THE OPTION OF TRAVELING DOWN NUMBER 2 ENTRY TOWARD 2B OR TOWARD 3C INTERSECTION SINCE THERE IS NO CONTAMINANT TO DIRECT TEAM TRAVEL.

2B TEAM STOP

TEAM STOPS-considering team travel is toward shaft-2B

Rule 23- Captain must make a visual examination of the roof at the shaft separation wall and by breaking the imaginary line toward 2C.

Rule 27- Captain must mark date and initials on shaft separation which prevents any further travel in that direction.

Rule 24- Gas test must be made in the opening toward 2C.

TRAVEL FROM 2B TO 2C.

2C TEAM STOP

Rule 23- Captain must make a visual examination of the roof by breaking the imaginary line toward 3C and 1C.

Rule 23- Captain must make a visual and roof and rib sound and vibration test at the unsafe between 2C and 1C. This test is a straight across test.

Rule 27- Captain must mark his date and initials at the unsafe roof between 2C and 1C as this is a condition that prohibits further travel in that direction.

Rule 23- Captain must make a visual and roof and rib examination by the zig-zag method, figure 1A page 40, of the rules at the unsafe between 2C and 3C where the Person is located.

Rule 27- Dates and initials are not required at the Person if they cannot be reached due to conditions of the mine (unsafe roof).

Rule 24- Gas tests must be made between 2C and 1C and between 2C and 3C by breaking the imaginary lines.

3C TEAM STOP

Rule 23- Captain must make a visual examination of the roof by breaking the imaginary lines toward 4C and 3B.

Rule 27- Captain must mark his dates and initials at the water roofed between 3C and 4C.

3

Rule 24- Gas tests must be made immediately outby the water roofed between 3C and 4C and at the open borehole located at the imaginary line to the left of intersection 3C. Gas test must also be made by breaking the imaginary line between 3C and 2B.

**TEAM HAS THE OPTION NOW OF TRAVELING UP
NUMBER ONE ENTRY OR NUMBER TWO ENTRY**

4B TEAM STOP

Rule 23- Captain must make a visual roof examination by breaking the imaginary line between 4B and 4C, 4B and 5B and 4B and 4A. Captain must make a sound and vibration test, straight across, at the caved airtight between 4B and 4C.

Rule 27- Captain must mark his dates and initials at the caved airtight between 4B and 4C, on the temporary stopping not intact between 4B and 5B and on the temporary stopping not intact between 4B and 4A.

4

Rule 24 – Gas test must be conducted at the caved airtight between 4B and 4C, inby the imaginary line between 4B and 5B and to the left of the imaginary line between 4A and 4B.

4A TEAM STOP

Rule 23- Captain must make a visual roof examination by breaking the imaginary line between 4A and 5A and between 4A and 3A. Captain must make a sound and vibration test, straight across, at the unsafe just inby the corner of 4A and 5A.

Rule 27- Captain must mark his dates and initials at the unsafe just inby the corner of 4A and 5a.

Rule 24 – Gas test must be made at the imaginary line just inby the corner between 4A and 5A. Gas tests must be made just outby the imaginary line between 4A and 3A.

5B TEAM STOP

Rule 23 – Captain must make a visual examination of roof and rib at shaft separation wall and break imaginary line of intersection between 5A and 5B.

Rule 27- Captain must mark date and initials on shaft separation which prevents and further travel in that direction.

Rule 32 – The team must stop and the captain examine, by touching with his or her hand, all missing persons (live person or body) prior to any team member passing the location of the missing person.

Rule 24- Gas test must be made by breaking the imaginary line of the intersection between 5A and 5B.

Rule 41(c)(1)- If a team subsequently finds necessary roof support to recover the patient(s), the team must stop (prior to the No. 5 team member passing the roof support), retrieve the roof supports and recover the patients(s). **THE TEAM MUST NOW PICK UP THE FOUR TIMBERS LOCATED BETWEEN 5A AND 5B AND RETURN TO THE PATIENT LOCATED BETWEEN 2C AND 3C AND SET THE SUPPORTS-FIGURE 3, PAGE 44.**

BETWEEN 2C AND 3C TEAM STOP

Rule 30(a) – Requires team to set supports at unsafe roof prior to rescuing persons per Figure 3, page 14.

Rule 32 – The team must stop and the captain examine, by touching with his or her hand, all missing persons (live person or body) prior to any team member passing the location of the missing person.

Rule 12 – When assessing an unconscious live person, a team member must physically contact patient.

1. Ask patient if he/she is okay; asking if he/she is “alright”
2. Look for absence of breathing or gasping, verbalize assessment.
3. Check for presence of a carotid pulse (5-10 seconds).
4. If present, control life threatening bleeding according to critical skill sheet (rule 34). **Must verbalize person has no bleeding.**

Rule 11 – Failure to properly protect patient, secure patient to stretcher, cover patient with blanket, or placing patient on stretcher in such a way as to foul proper operation of apparatus. Patient should be secured to stretcher by at least two bandages or straps, one around trunk of body and one around legs, covered with blanket from the neck to and including the feet.

REMOVE UNCONSCIOUS PERSON TO THE FRESH-AIR BASE.

5A TEAM STOP

AT THIS TIME YOU MAY USE A PATIENT OR A JUDGE FROM BEHIND THE BARRICADE WILL START VERBAL CONTACT WITH THE TEAM. HE SHOULD ONLY SAY, “HELP; HELP GET ME OUT OF HERE.” THIS PERSON WILL LATER BECOME A BODY SO THERE IS NO NEED TO HAVE A TEAMS PATIENT STAND IN THIS LOCATION.

Rule 23 – Captain must make a visual examination of roof and rib at barricade and when breaking the imaginary line of intersection between 5A and 4A. Captain must make a visual roof examination and make a sound and vibration test, straight across, at the unsafe outby between 4A and 5A.

Rule 27 – Captain must date and initial the barricade in 5A intersection. Captain must date and initial the unsafe roof between 4A and 5A.

Rule 24- Gas tests must be made at the barricade and at the unsafe roof between 4A and 5A.

THIS COMPLETES INITIAL EXPLORATION OF ALL ACCESSIBLE AREAS AND REMOVAL OF ONE MINER TO FRESH-AIR BASE.

TEAM WILL NOW DECIDE TO TRY AND VENTILATE THE BARRICADE IN NUMBER ONE ENTRY. THEY CANNOT AND SHOULD CONTINUE TO EXPLORE LOOKING FOR TIMBERS.

IF TEAM TRIES TO AIRLOCK AND GO THROUGH DOOR IN SEPARATION WALL, AIR WILL MOVE DOWN THE INTAKE SHAFT DUE TO THE EXHAUST SIDE FAN OPERATING. THE EXPLOSIVE MIXTURE IN THE INTERSECTION ALONG WITH THE IRRESPIRABLE MIXTURE WILL BE MOVED OVER AN UNEXPLORED AREA AND OVER THE BATTERY MINE PHONE. DISCOUNTS SHOULD BE:

Rule 31a

1- 5.0% CH₄ mixture X 1 ignition source X 30=30 points

1- 5.0% CH₄ mixture X 1 unexplored area X 30= 30 points

Rule 30f

1- 18.0 % O₂ mixture X 1- unexplored area X two missing persons X 5 = 10 points.

THE PLACARD SHOULD BE TURNED OVER IN THIS CASE TO SHOW THE TEAM HAS REMOVED THE EXPLOSIVE AND IRRESPIRABLE MIXTURE THROUGH THE DOOR.

TOTAL DISCOUNTS SHOULD BE 70 POINTS IF TEAM TRIES TO AIRLOCK AND GO THROUGH DOOR IN SHAFT WALL.

IF TEAM TRIES TO VENTILATE BY REMOVING OPENING THE DOOR, EXPLORING BEHIND THE SEPARATION IN THE SHAFT WALL AND MOVING THE MINE PHONE TO BEHIND EITHER THE BUILD INBY 5B OR BEHIND THE BUILD IN THE CROSSCUT FROM 5B TO 5C ALSO BUILDING AT THE TEMPORARY

STOPPING NOT INTACT BETWEEN 4B AND 5B, THE AIR WILL SHORT CIRCUIT DOWN THE SHAFT AND THE EXPLOSIVE AND IRRESPIRABLE IN FRONT OF THE BARRICADE WILL BE MOVED BUT NOT REMOVED.

TEAMS MUST NOW FIGURE OUT HOW TO VENTILATE AND PUMP THE WATER INBY 3C TO EXPLORE FURTHER FOR TIMBERS.

FIRST VENTILATION CHANGE

AT A MINIMUM TEAMS MUST BUILD BETWEEN 3A AND 4A, or 4A and 5A AND BETWEEN 3B AND 4B OR BETWEEN 4B AND 5B.

Rule 23- The captain must check roof and rib by making a visual and the sound and vibration method where the temporary stopping(s) are to be built.

Rule 27- The captain must mark dates and initials at each team built stopping.

MOVE THE PERMISSIBLE BATTERY PHONE FROM THE INTERSECTION OF THE EXHAUST SHAFT OVER TO WHERE THE BATTERY SCOOP IS LOCATED. MOVE THE PERMISSIBLE BATTERY PHONE FROM BESIDE TAILPIECE TO BATTERY SCOOP OR ISOLATE THEM BOTH. BUILD BETWEEN 2B AND 2C TO ISOLATE THE BATTERY SCOOP AND 2 PHONES.

3C TEAM STOP FOR VENT CHANGE

Rule 19- The team must notify the command center and obtain permission before ventilation changes are made or power circuits energized.

The team must obtain permission to turn the “A” shaft exhaust fan on and to move the methane and irrespirable mixture from in front of the roofed water and the mixture between 1C and 2C. Intake air will move down the slope across the unsafe ventilating the water roofed and return to the “A” shaft exhaust fan. This will occur even if the intake air shaft is not blocked. This means there are two sources of intake air and if all the air from the slope is used to ventilate the roofed water it is correct.

Rule 19- The team must hold the line curtain up from the outby left corner of the 3C block to the water roofed to within five feet of the water roofed to clear the gas against the roofed water.

Rule 19- Teams must hold line curtain up to within five feet of where the water is roofed to remove the gases.

Rule 24F- The team must make all 3 gas tests at the area where the roofed water was initially located. The gases should be removed at this point.

Rule 23- The captain must check roof and rib by making a visual and the sound and vibration method where the temporary stopping is to be built.

Rule 42- The team must now erect a temporary stopping (airlock) before pumping the roofed water.

Rule 27- The captain must mark dates and initials at each team built stopping.

Rule 19- The team must notify the command center and obtain permission before ventilation changes are made or power circuits energized. If the team has not already they must now get permission to energize the pump. The pump must be energized.

JUDGES WAIT 10 SECONDS AFTER THE COMMAND CENTER TURNS THE PUMP ON TO TURN THE PLACARD OVER SHOWING WATER PUMPED.

The pump may be left on or turned off. The water will not return to roofed condition.

Rule 23- Captain must make a visual examination of roof and rib immediately prior to moving into the area where the water was roofed.

Rule 24D- The captain must take a gas test just inby where the roofed water was located prior to any other team member entering the area.

4C TEAM STOP

Rule 23 – Captain must make a visual examination of roof and rib when breaking the imaginary line of intersection between 4C and 4B. Captain must make a visual examination of roof and rib when breaking the imaginary line of intersection between 4C and 5C.

Captain must make a visual roof examination and make a sound and vibration test, straight across, at the caved airtight between 4C and 5B.

Rule 27- Captain must mark his dates and initials at the caved airtight between 4C and 4B.

Rule 32- The captain must stop and examine, by touching with his/her hand all bodies prior to any team member passing the location of the missing person.

Rule 27 – Captain must date and initial the body just inby the corner of 4C.

THE TEAM MUST PICK UP THE SIX TIMBERS. TEAMS NEED NOT GO ANY FURTHER IN THIS ENTRY DURING THE REST OF THIS PROBLEM. IF THEY DO CONTINUE TO EXPLORE AFTER BREACHING THE BARRICADE DO NOT DISCOUNT THEM.

Rule 24- Gas test must be made by breaking the imaginary line of the intersection between 4C and 5C.

Rule 24- Gas test must be made by taking a gas test at the caved airtight between 4C and 4B.

Rule 42- The team must now erect a temporary stopping (airlock) before breaching the airlock they built prior to pumping the roofed water.

Rule 27- The captain must mark dates and initials at each team built stopping.

IF THE TEAM TURNS THE “A” SHAFT FAN OFF AND DOES NOT AIRLOCK TO GO OUT OF #3 AFTER PUMPING THE WATER AND EXPLORING, AIR WILL COME DOWN THE INTAKE SIDE OF THE “B” SHAFT AND PICK UP THE 5% CH₄ AND 19.0% O₂ IN 4C AND MOVE IT OVER THE BATTERY POWERED SCOOP AND UNEXPLORED AREA BETWEEN THE PLACARD AND THE OPERATING EXHAUST FAN AT “B” SHAFT. THIS WILL HAPPEN

IF THE TEAM TAKES EITHER ONE OF THE TWO STOPPINGS OUT THAT WAS BUILT IN #1 OR #2 ENTRIES DURING THE VENTILATION OF THE ROOFED WATER.

TO GET OUT OF #3 ENTRY WHERE THE ROOFED WATER WAS PUMPED THE TEAM MUST AIRLOCK NO MATTER IF THEY TURN THE “A” SHAFT FAN OFF OR NOT.

THE TEAM SHOULD ASK THE COMMAND CENTER TO TURN THE FAN OFF AND AIRLOCK OUT OF #3 ENTRY. NO PERMISSION IS NEEDED FOR THIS ACTION.

4A TEAM STOP

TEAM STOP-4A OR THE TEAM MAY CHOOSE TO TIMBER THROUGH THE UNSAFE FROM THE 5A END

Rule 30A- Teams supporting unsafe roof may use either procedure in Figure 2, page 42 of the rules. This unsafe is four feet wide, therefore, it should only take no more than the timbers provided depending on the method the captain uses.

THE BATTERY MINE PHONE MUST BE MOVED FROM THE INBY SIDE OF THE UNSAFE IN NUMBER ONE TO BE ISOLATED AND MAY BE MOVE FROM 4A OVER TO 4B AND PLACE WITH THE BATTERY SCOOP WHERE THE NEXT BUILD WILL TAKE PLACE. IF THE BATTERY MINE PHONE IS NOT MOVED AND THE TWO 5% MIXTURES, ONE AT THE BARRICADE AND ONE AT THE INTAKE AT "B" SHAFT MOVES OVER THE PHONE, IT WILL RESULT IN A 60 POINT DISCOUNT- RULE 31 X 2.

2ND VENTILATION CHANGE

AT A MINIMUM THE TEAM MUST BUILD BETWEEN 4B AND 5B TO PREVENT A SHORT CIRCUIT OF AIR AND TO PREVENT THE 5% FROM BEING MOVED OVER THE BATTERY SCOOP JUST INBY 4B. IF NOT PREVIOUSLY BUILT, THERE MUST BE A STOPPING BETWEEN 2B AND 2C TO PREVENT THE EXPLOSIVE MIXTURE(S) FROM TRAVELING THAT ROUTE.

Rule 23- The captain must check roof and rib by making a visual and the sound and vibration method where the temporary stopping is to be built.

Rule 27- The captain must mark dates and initials at each team built stopping.

NO OTHER BUILD IS REQUIRED BY THE RULES-ALL OF THE AIR FROM THE "B" SHAFT INTAKE WILL MOVE BY THE BARRICADE SWEEPING THE GASES FROM THE FRONT WITHOUT USING A LINE CURTAIN SINCE THE BARRICADE IS FLUSH WITH THE CORNER.

Rule 19- The team must notify the command center and obtain permission before ventilation changes are made or power circuits energized. The "A" shaft fan must now be energized.

Rule 24F- The team must make all 3 gas tests at the area where the gases were initially in front of the barricade. The gases should be removed at this point.

THE TEAM MUST NOW AIRLOCK TO ENTER THE BARRICADE. THIS WILL REQUIRE TWO BUILDS- ONE BETWEEN 4A AND 5A AND ANOTHER BETWEEN 5A AND 5B.

Rule 23- The captain must check roof and rib by making a visual and the sound and vibration method where the temporary stopping is to be built.

Rule 27- The captain must mark dates and initials at each team built stopping.

THE BARRICADE MAY NOW BE TAKEN DOWN.

Rule 24D- The captain must take a gas test just inby where the barricade was located prior to any other team member entering the area.

Rule 32- The captain must stop and examine, by touching with his/her hand all bodies prior to any team member passing the location of the missing person.

Rule 27 – Captain must date and initial the body just inby the corner of 4C.

Rule 23- The captain must check roof and rib by making a visual and the sound and vibration method where the temporary stopping is to be built (this is where the barricade was located).

Rule 27- The captain must mark dates and initials at each team built stopping.

THE TEAM HAS NOW COMPLETED THE PROBLEM BY FINDING THE LAST COAL MINER. THEY MAY NOW RETREAT TO THE FRESH-AIR BASE AND STOP THE CLOCK. ANY WORK DONE AFTER THIS SHOULD BE UP TO THE TEAM'S DISCRETION. DO NOT DISCOUNT THE TEAM.

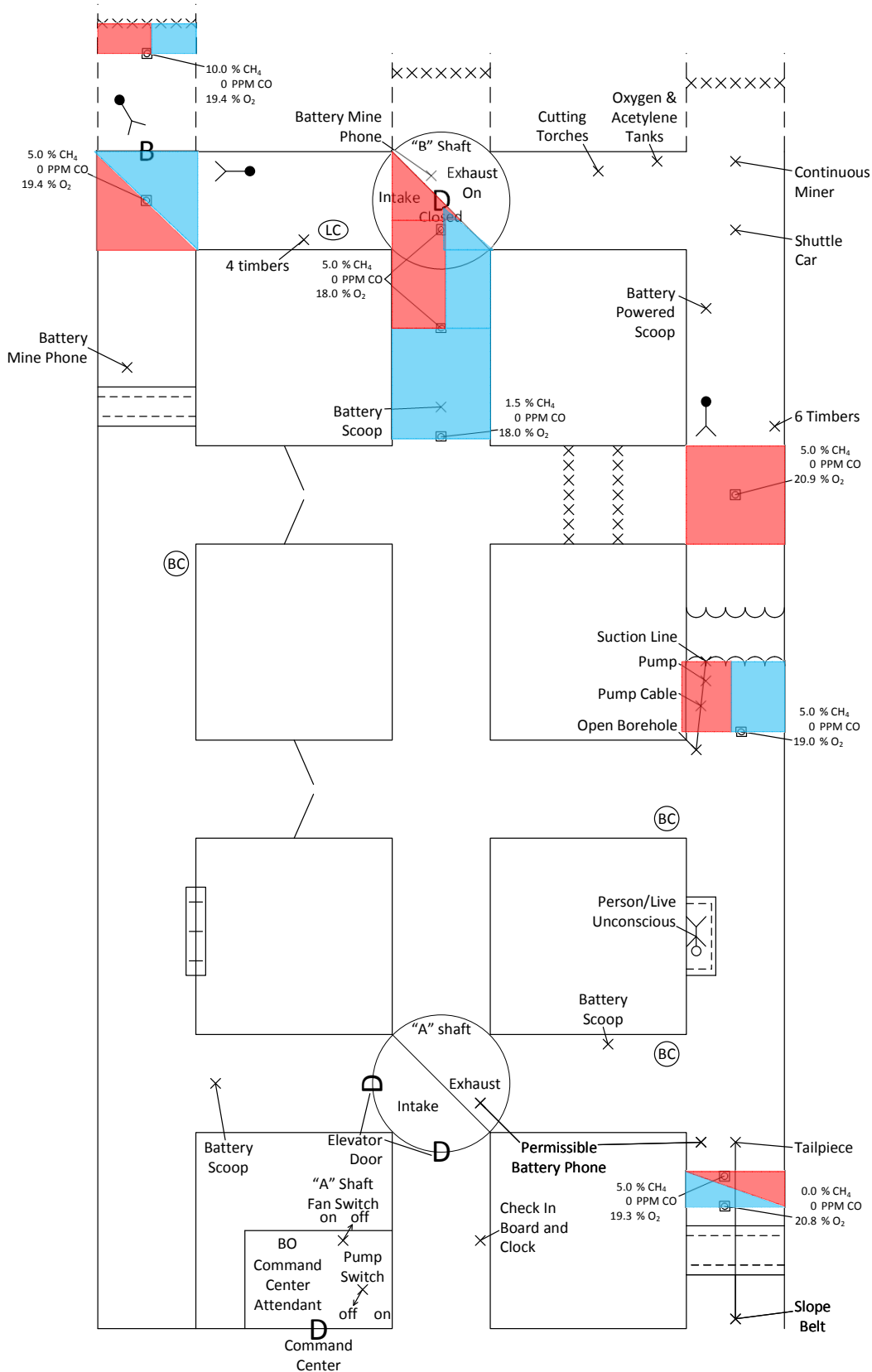
JUDGES SHOULD SHOW ON THE FINAL VENTILATION MAP AN FPA AT THE BODY IN #1 AND AN FPA AT THE BODY IN #3, IF IN FACT THIS IS THE LOCATION THE TEAM STOPPED EXPLORATION.

PATIENT STATEMENT BEHIND BARRICADE

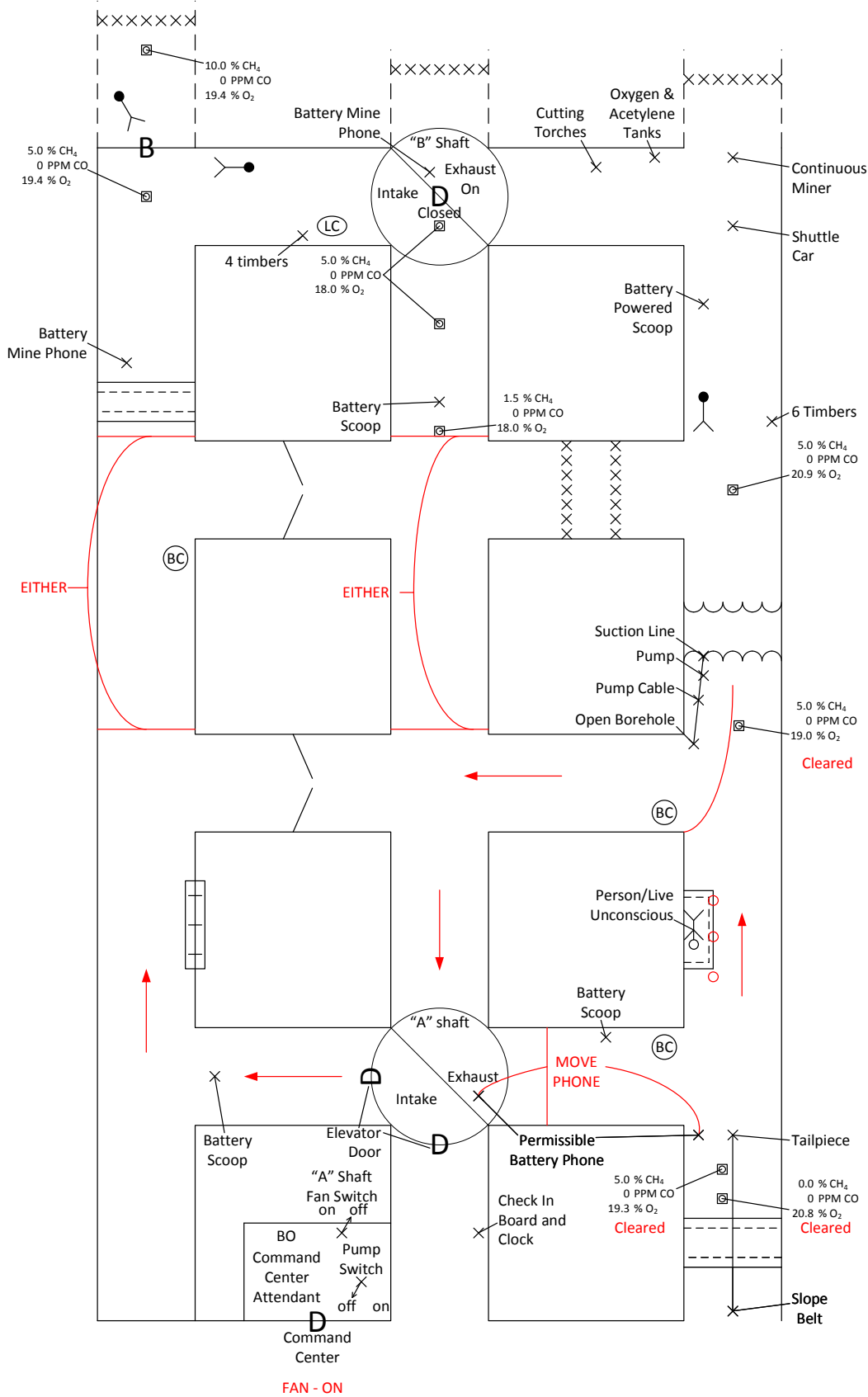
HELP, HELP GET ME OUT

2015 Hatfield McCoy Mine Rescue Contest – Day 1

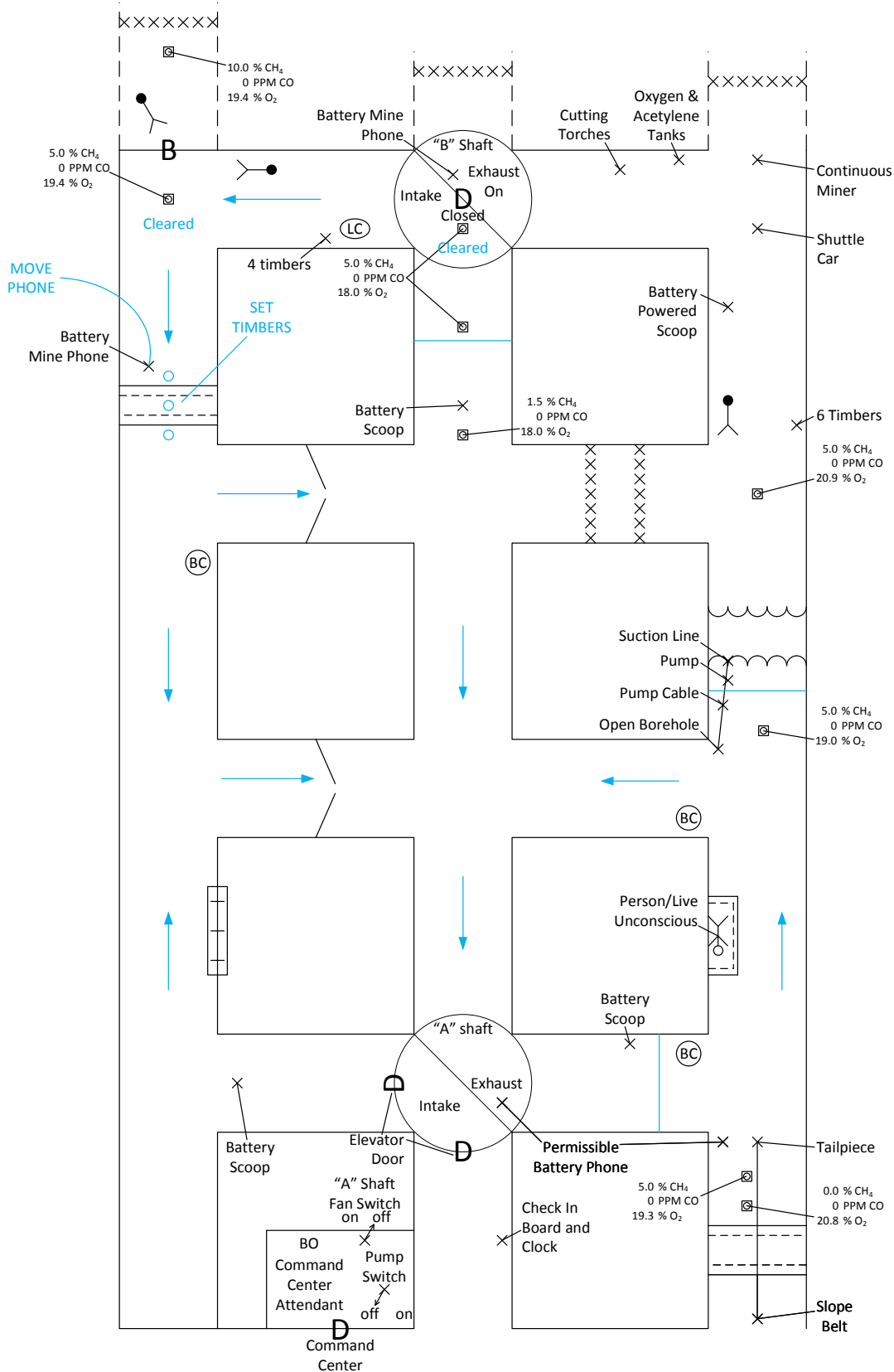
Extent of Gas



VENTILATION 1



2015 Hatfield McCoy Mine Rescue Contest – Day 1 VENTILATION 2

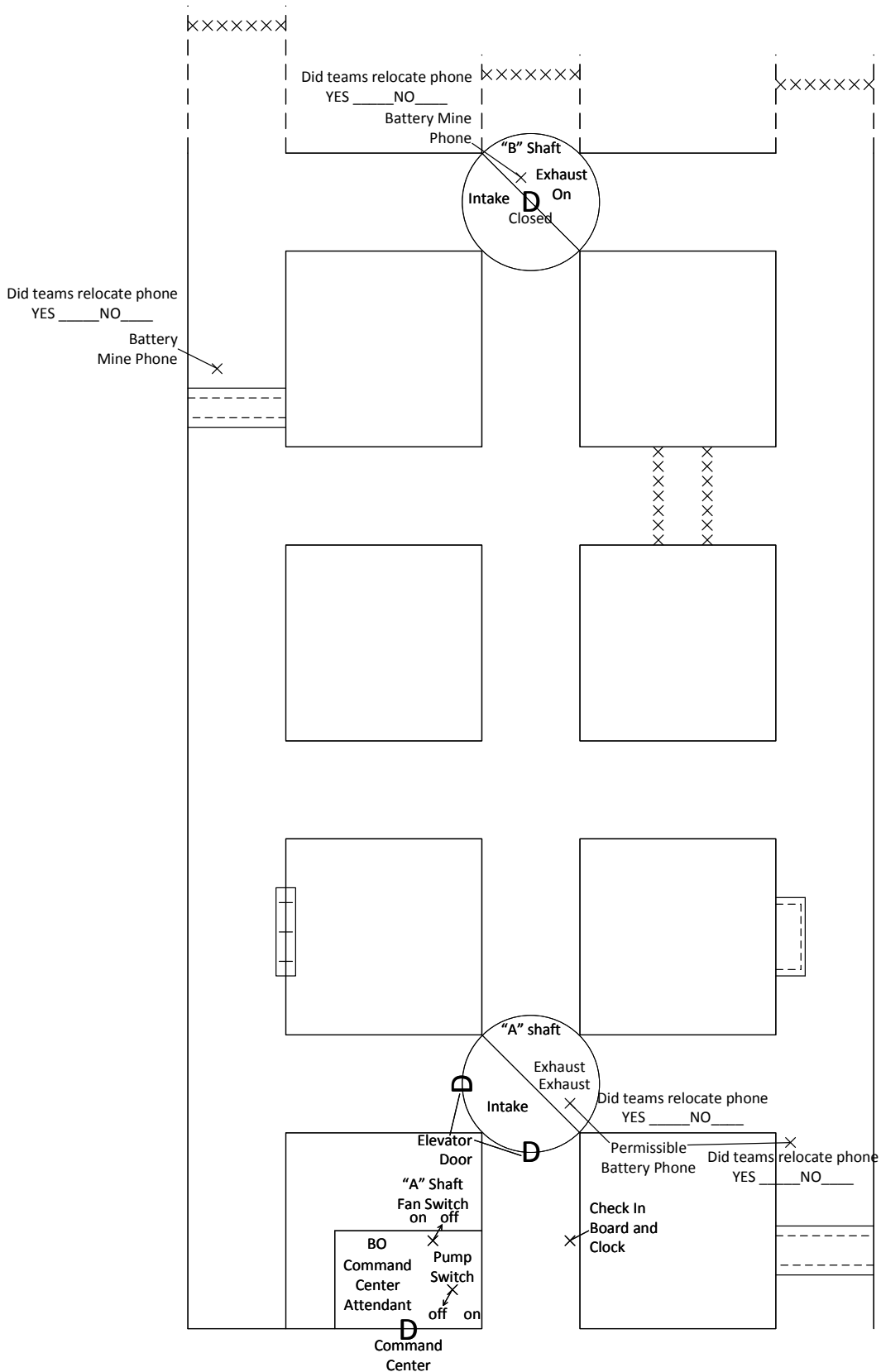


FINAL VENT MAP

Team Number _____

Did teams explore to #3 entry _____
 YES _____ NO _____

Captain/Designee _____



2015 Hatfield McCoy Mine Rescue Contest – Day 1
TEAM STOPS

